

EXHIBIT M

Mehlretter, Andria Hobbs

From: [REDACTED]
Sent: Friday, May 03, 2013 11:50 PM
To: Mehlretter, Andria Hobbs
Subject: RE: silicone rubbers

Let's talk Monday if possible. They can vary drastically, organic content, phenyl to methyl ratio, fluorinate or not and crosslinking chemistry can be drastically. NMR is ideal if you have it.

Call my cell [REDACTED]

[REDACTED]

[REDACTED]

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From: Mehlretter, Andria Hobbs [REDACTED]
Sent: Friday, May 03, 2013 11:56 AM
[REDACTED]
Subject: silicone rubbers

Hi [REDACTED]

I am working a case with a couple different silicone rubbers. By different, I mean that I have a couple of different clear silicone caulk tubes to compare to silicone rubbers from a crime scene. What analytical technique would most likely allow me to differentiate silicone rubbers, or are silicone rubbers all pretty much the same?

Thanks, and have a great weekend,
Andria

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Mehltretter, Andria Hobbs

From: Mehltretter, Andria Hobbs
Sent: Wednesday, May 08, 2013 11:40 AM
Subject: Polymer update

Hi [REDACTED]

I don't have much progress to report. I'm still waiting for additional samples (including all the tape I am to receive). In the meantime, I have reached out to the sealant manufacturer for the tubes I received. Since cured silicones don't appear to be very different from each other by the techniques we typically use in PPSU, I hope the manufacturer can help me identify a method that would be helpful for discrimination or assessing the significance of a failed-to-discriminate result. Just in case I need to say it, I have given them no details about which case I am examining.

Regards,
Andria

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Mehlretter, Andria Hobbs

From: [REDACTED]
Sent: Monday, May 13, 2013 11:43 AM
To: Mehlretter, Andria Hobbs
Subject: RE: Follow-up - CH stretch bands

Andria,

The additional bands found in the C-H stretch region at 2925 cm⁻¹ and 2850 cm⁻¹ are due to aliphatic CH₂ groups in one of the formulation components found in the GE Silicone II Clear, but is absent in the GE Clear Supreme. That component is basically an aliphatic hydrocarbon fluid. If you look closely in the C-H deformation region near 1400 cm⁻¹, you will see those bands from the CH₂ functionality, as well. All the other major bands in both spectra are due to the siloxane polymer(s) and fumed silica filler as cured into a network structure.

-----Original Message-----

From: Mehlretter, Andria Hobbs [REDACTED]
Sent: Friday, May 10, 2013 11:28 AM
To: [REDACTED]
Subject: RE: Follow-up

Thank you, [REDACTED]

I did ATR on the two samples and am seeing some minor differences out in the 3000 cm⁻¹ region where you suggested I look. The differences are repeatable, but please weigh in if you have any thoughts.

Thanks yet again, and have a wonderful weekend.
Andria

-----Original Message-----

From: [REDACTED]
Sent: Thursday, May 09, 2013 4:53 PM
To: Mehlretter, Andria Hobbs; [REDACTED]
Subject: RE: Follow-up

Andria,

Methyldiacetoxypisopoxysilane CH₃(OAc)₂(OiPr)Si

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[REDACTED]
[REDACTED]
-----Original Message-----

From: Mehlretter, Andria Hobbs [mailto:Andria.Mehlretter@ic.fbi.gov]

Sent: Thursday, May 09, 2013 4:11 PM

To: [REDACTED]

Subject: Follow-up

Hello, [REDACTED]

One quick follow up...for now. There's sure to be more.

Could I please get the name and/or chemical formula of that methyl....silane compound that's in the Supreme and acts like a catalyst?

Thanks again for all your help and input. I and those affected by this crime truly appreciate it.

Thanks,
Andria

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Mehlretter, Andria Hobbs

From: [REDACTED]
Sent: Tuesday, May 21, 2013 11:01 AM
To: Mehlretter, Andria Hobbs
Subject: RE: Ba or Sb?

Andria - That seems more likely, then. If amounts are very small, it would be incidental or external origin, not intentional formulation components.

-----Original Message-----

From: Mehlretter, Andria Hobbs [REDACTED]
Sent: Tuesday, May 21, 2013 10:59 AM
To: [REDACTED]
Subject: RE: Ba or Sb?

Hi, [REDACTED]

Thank you for getting back to me. I am seeing very small amounts of Ba and Sb in one of my unknown samples by XRF. It's likely contamination from an external source, but I am just checking all possibilities. Your information is very helpful. Thanks!

Andria

-----Original Message-----

From: [REDACTED]
Sent: Monday, May 20, 2013 3:42 PM
To: Mehlretter, Andria Hobbs
Subject: RE: Ba or Sb?

Andria,

Barium is a possibility at trace levels for CaCO₃ filled products (same periodic group) but not likely an intentional additive. Antimony is a stranger one. Arsenicals are more likely added as fungicides to prevent cured caulk from mold and mildew formation. I have rarely come across antimony species in all my years in industrial analysis. Let me check and get back to you. I assume you observed these by EDS or similar analyses. Low percent or low PPM levels?

Antimony oxides may be used as flame retardants, but not in Momentive products as far as I am aware. Maybe other manufacturers, though.

If the barium is at a higher level, it may be added to silicones for radio-opacity in the form of barium sulfate (such as for catheters). That is not really a sealant application, though.

There are antimony containing species used in the cure packages of certain silicone coatings systems like paper release products - usually as an antimonyhexafluoro- compound. They act as a superacid to promote rapid UV-cure (photo-initiator). Not used in commercial sealants to my knowledge.

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-----Original Message-----

From: Mehlretter, Andria Hobbs [REDACTED]
Sent: Monday, May 20, 2013 3:13 PM
To: [REDACTED]
Subject: Ba or Sb?

Hi [REDACTED]

Hopefully, a simple question for you: could barium or antimony ever be an unintended contaminant in a silicone caulk, or perhaps ever even be intentionally added in very small quantities (e.g., less than the Sn you mentioned in the GE Silicone II)?

Thanks,
Andria

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EXHIBIT N

ADHESIVE TAPES AS TRACE EVIDENCE

John Johnston, PSTC technical consultant emeritus.

When Richard Drew of 3M developed creped paper masking tape in 1925, he began a revolutionary change in the way we live. From that first step, taking us from the over a century-old cloth backed pressure sensitive tape for surgical use to the many and varied industrial tapes which followed Richard Drew's masking tape, it changed how we make things and how we do things. It is used in the manufacturing process, in the finished product, or on the package it comes in, of just about everything in our daily lives. At least one piece of adhesive tape is involved somewhere in almost everything in our lives. This can be from wrapping a Christmas or birthday present to sending man into space.

Adhesive tape has served in the most noble of our endeavors. A roll of coated cloth adhesive tape known as 'mission tape' goes on board every American mission into space. It was that tape which helped jury-rig the carbon dioxide filter which saved the lives of the three astronauts on the Apollo 13 mission.

The Need for Training of Forensic Scientists

Unfortunately the criminal element has also discovered the thousand uses for adhesive tape, and it is being found more and more as trace evidence at the crime scene. By far the commonest tape found as evidence in two out of three cases involving adhesive tape, is duct tape. It has been used from the packaging of drugs, as a gag and ligature, and in the disposal of murder victims. The next most common tape as evidence is vinyl electrical tape, usually in explosive devices, but for other uses too, including ligatures. In the last five and a half years around 600 cases have been identified where vinyl electrical tape had been used in constructing explosive devices. Then in lesser use by the criminal element are masking tape, polypropylene packaging tape and filament tape, with other types of tape in rare cases.

We now list thousands of different commercial adhesive tapes in our product directory. To those made and sold by their manufacturers in this country, we can add the imports, also the private branded products sold by distributors or found in the Consumer market. That can include a variety of imported tapes, mostly from various countries in the Far East, but also from Germany, Italy, Poland and elsewhere in the world. There are over 100 different duct tapes listed in the PSTC Directory and if we consider differences in color that number goes up to over 250. When adhesive tape is found as evidence, the forensic scientist, whose proper title is 'criminalist', with little or no knowledge of tape construction, must find his or her way through this maze. They must first clearly identify the tape, and then confirm without a shadow of a doubt that it is the same type of tape as that found elsewhere, usually in the possession of the suspect.

The Crime Laboratory

The typical crime laboratory is a far cry from that shown in the various television CSI programs where one technician does everything. The modern criminalist usually decides to specialize in one aspect of evidence examination. The criminalistics section of a typical large forensics laboratory would be divided into a number of lesser labs each with their own specialist(s) such as

DNA

Latent prints

Questioned documents

Hairs and fibers

Illicit drugs, poisons

Firearms, explosives, tool marks

Arson

Trace evidence-paints, coatings, plastics, glass, adhesive tapes

Trace evidence can wind up as a catch-all, and in a smaller lab, hairs and fibers, and even tool marks, can also wind up that group. Needless to say, that's where adhesive tape also winds up, irrespective of evidence size. While the criminalist is studying for his or her specific degree in criminalistics, it is rare for any training on adhesive tape examination and analysis to be given. In receiving adhesive tape as evidence for examination, the first thing that the inexperienced criminalist would be expected to do, would be to turn to the published literature for help. Unfortunately there is nothing specific on adhesive tape examination and testing in any of the standard forensics textbooks. Further, whatever has been published on adhesive tape in the appropriate forensics journals over the years is slight, scattered, and spanning quite a few years and countries. What technical papers have been published are usually related to the testing of a specific type of tape and almost all of them are related to vinyl electrical tapes. So it becomes very difficult to find a broad spectrum article on adhesive tape that could be used as 'basic' training.

The FBI Academy recognized this need, and with adhesive tape appearing more and more as trace evidence, some years ago they added adhesive tape examination and analysis to their one week course on Paints and Coatings. They were able to provide the necessary training on the various analytical methods which could be used for adhesive tape examination but looked to the adhesive tape industry to provide an instructor who would provide first-hand knowledge of adhesive tape design, manufacture and unique features. After a couple of false starts they finally recruited Dr Jerry Serra of Tyco Adhesives, who in turn recruited the author. This has proved to be very successful, and with an ever-increasing need for training in adhesive tape examination and analysis, the FBI Academy is now offering a one week course devoted solely to adhesive tape examination and analysis. Further, over the last three or four years criminalists from across the country who have attended the FBI course and have recognized its value have arranged for similar presentations on adhesive tape examination and analysis to be given at their own area annual conferences and workshops.

What the Adhesive Tape Industry can Offer

It is worth noting that apart the jurisprudence aspect, the adhesive tape chemist has much in common with the trace evidence criminalist. They both must be experts in a broad range of materials, covering plastics, films, coatings, polymers, fibers, textiles, glass filaments and fillers, and must know something about the processes that produce each. They must both be skilled in product analysis and in knowing the best analytical procedures to generate the maximum number of answers

When dealing with adhesive tapes as evidence, it is reduced to the ability to accurately match the evidence tape with a similar tape in the possession of the suspect. So the number of points of agreement, and even possible disagreement can be very significant in confirming or denying the possible source of the tape. The forensic scientist would normally follow the routine methods of analysis such as the physical examination of the various tape components and the infrared spectra of each.

What an instructor from the adhesive tape industry can offer the forensic scientist community over and above the various analytical procedures used, is a detailed knowledge of the common types of pressure sensitive adhesive used in adhesive tapes, the various possible components, their chemistry and solubility. Added to this are the many and various ways that an adhesive tape can be constructed. A detailed knowledge of the various backings used in tape construction, and their chemistry, can be provided, and the multiple coatings that are involved. This would cover release and prime coats, backsize coatings and saturants, indicating the possible components and chemistry of each coating, and the subtle ways in which alternate designs and processes can differentiate one tape from another.

Adhesive Tape Subtleties

There are also many subtleties within a given type of tape which are not readily apparent to those unfamiliar with tape technology, but can add considerably to the ways in which the evidence tape and a tape roll are alike or different. Most of these tests are quick and simple to do, and can quickly exclude various candidates prior to beginning any lengthy or more complex test procedures. Such subtleties can include

The various types of fabric weave that are used in the construction of a duct tape. To this is added the cloth count, yarn chemistry, yarn weight and twist, all of which help to isolate a specific duct tape.

The chemical nature of the yarn in the fabric, which can be rapidly identified under polarized light.

The small impressions in the polyethylene backing found in an extruded film duct tape and their significance.

The creping of masking tape paper, and which side has been coated with adhesive.

The significance and variety of bubbles in the adhesive of a tape, and how they differ, based on their origin.

The physical edge differences which result from different slitting techniques.

The use of tape cross-sections in identifying multi-layer film backings.

The differing optical characteristics of transparent oriented film under polarized light, based on film thickness.

The effect of ultraviolet light on certain tapes.

The components of the film backing of PVC electrical tapes, and the means to identify them by energy dispersive x-ray analysis.

The awareness that a latent print is left by a pressure sensitive tape after removal which can help identify the type of tape used.

It is also pointed out that an adhesive tape can be a collector of other trace evidence including hairs and fibers, and so the adhesive surface should be examined very carefully. While it is extremely rare for the adhesive of adhesive tape to be touched by hand during the manufacturing process, it is impossible not to touch the adhesive surface when using the tape manually. Somewhere on that tape surface there could be a useable latent print.

Training

Almost all of the above characteristics are very simple to demonstrate, and there's no easier way to learn than hands-on experience. For this, in the present 'Adhesive Tape as Trace Evidence' classes held across the country, a kit of basic test equipment and a range of test samples are provided to each attendee. This kit consists of a cloth counting glass, a simple X30 pocket microscope, an ultraviolet light, a pick, a soft black pencil, two small sheets of Polaroid® film, creped paper and a selection of various tape samples. As each feature is discussed the attendees can then investigate that feature for themselves using the samples and equipment provided. Three or four 'unknown' tapes are then given out, with the attendees generating as much information as possible on each unknown, using the techniques already demonstrated. The results are then compared and contrasted in general discussion.

It is emphasized that even when all of the many characteristics of the evidence tape agree with those same characteristics found in a roll of tape which is in the possession of the suspect, all that can be said is that a high probability exists that they are related. The only true way to know that the evidence tape originated from the suspect's tape is by matching the torn edges.

Looking at the future of the education of forensic scientists in adhesive tape technology, examination and analysis, until such time as it becomes part of the University training

curriculum, it would be hoped that the adhesive tape industry as a whole, perhaps by acting through the Pressure Sensitive Tape Council, could expand its education objectives and take ownership of this worthy cause. Adhesive tape companies, particularly duct tape manufacturers, can also assist in the education of scientific law enforcement by offering guided tours of their manufacturing facilities. When an adhesive tape company is asked to assist in criminal cases involving adhesive tape, it would be helpful to have one specific individual permanently assigned within that company to act as coordinator. With willingness from corporate level to the individual, we can all help to put the bad guy where he belongs.

Acknowledgements

My thanks go to Dr Jerry Serra, Covalence Adhesives, Inc., and to Jenny Smith, of the Jefferson City Crime Lab, Missouri for their input, also those adhesive tape companies and suppliers who have kindly provided samples for use in the present education program.